

FESENKOV, V.G., akademik

Solar cometary cloud and the interstellar space. Zem.
i vsel. 1 no.4:6-11 J1-Ag '65.

(MIRA 18:12)

L 15760-66 EWT(1)/FCO CW

ACC NR: AP6006785

SOURCE CODE: UR/0033/66/043/001/0198/0203

AUTHOR: Fesenkov, V. G.

45
B

ORG: Committee on Meteorites, Academy of Sciences SSSR (Komitet po meteoritam Akademii nauk SSSR)

TITLE: Polarization method of investigating twilight phenomena

SOURCE: Astronomicheskii zhurnal, v. 43, no. 1, 1966, 198-203

TOPIC TAGS: twilight, light polarization, primary twilight, atmospheric optics

ABSTRACT: A method is proposed for computing the tropospheric component (higher-order scattering), based on observations of the intensity and polarization of the twilight sky in two symmetrical points of the solar vertical. The ratio of polarization in these points is found beforehand from preliminary computations. Formulas for these computations are derived and applied to a simplified model of a twilight segment. The preliminary computations and polarization measurements must be carried out with an absolute accuracy of about 0.01%. It is found that the parts of the twilight segment that are most distant from the solar vertical, especially in the case of the second twilight point, result in negative polariza-

Card 1/2

UDC: 525.72

L 15760-66

ACC NR: AP6006785

tion. The brightness of these parts is insignificant even when the sun is considerably depressed. Orig. art. has: -20 formulas and 4 tables. [DM] 0

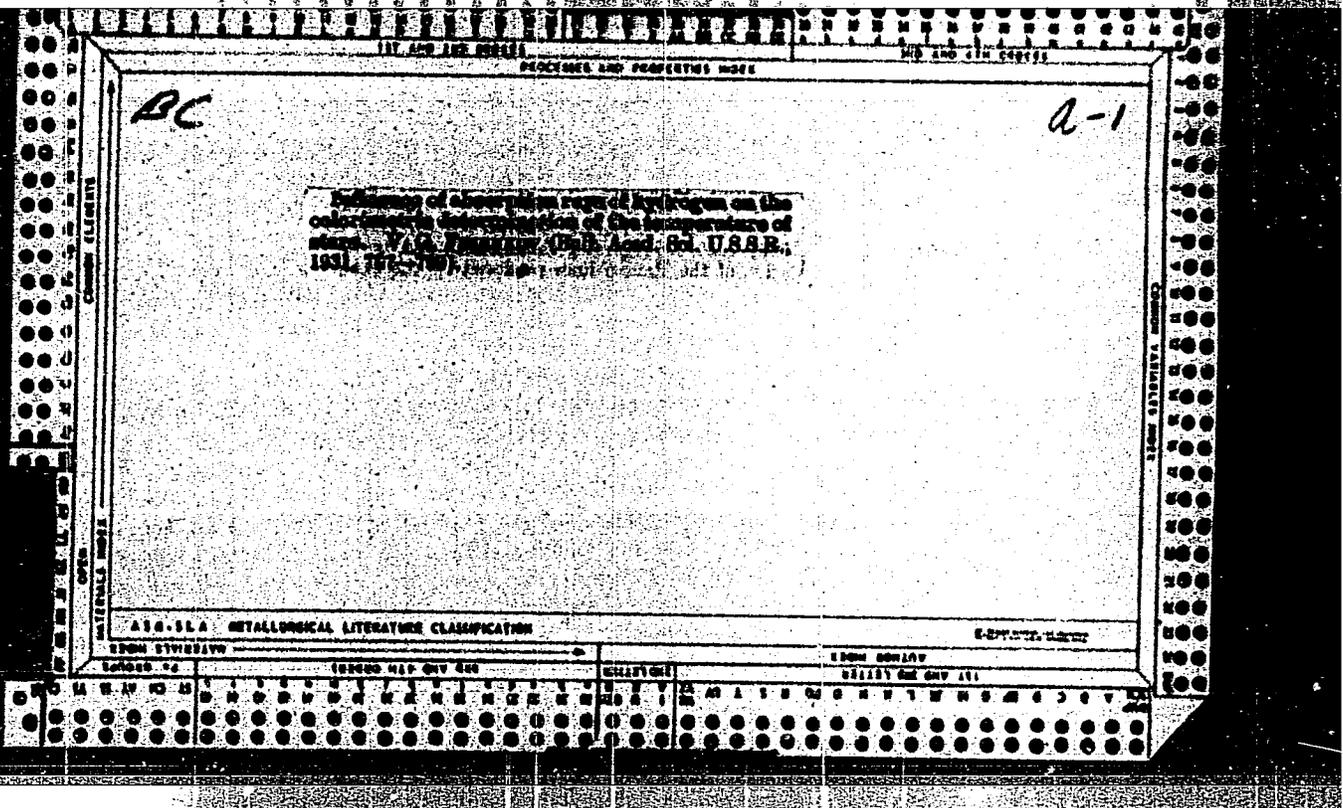
SUB CODE: 04/ SUBM DATE: 18Oct65/ ORIG REF: 002/ ATD PRESS: 4260

Card 2/2 SYN

1926-1949

FESENKOV, V. [G]

Photometric catalog of 1155 Stars
Kharkiv, Derzhavne vyd-vo Ukrainy, 1926. 44 p.
Text in English and Russian.



PRINCIPLES AND PROPERTIES INDEX
1ST AND 2ND ORDERS

co

5

Influence of inclination of rays on sensitivity of photographic plates. Y. G. FENBERG and V. A. KURANOV. *Bull. acad. sci. U. R. S. S. Classe sci. math. nat.* 1931, **1931**: *Phil. Abstr.* **12**, 213. The sensitivity does not appreciably diminish until the angle of incidence is less than 45°.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

E Z

REGIONAL INDEX

COMMON ELEMENTS

NATIONAL INDEX

REGIONAL INDEX

COMMON ELEMENTS

NATIONAL INDEX

117 AND 120 GROUPS PROCESSES AND PROPERTIES INDEX 120 AND 4TH GROUPS

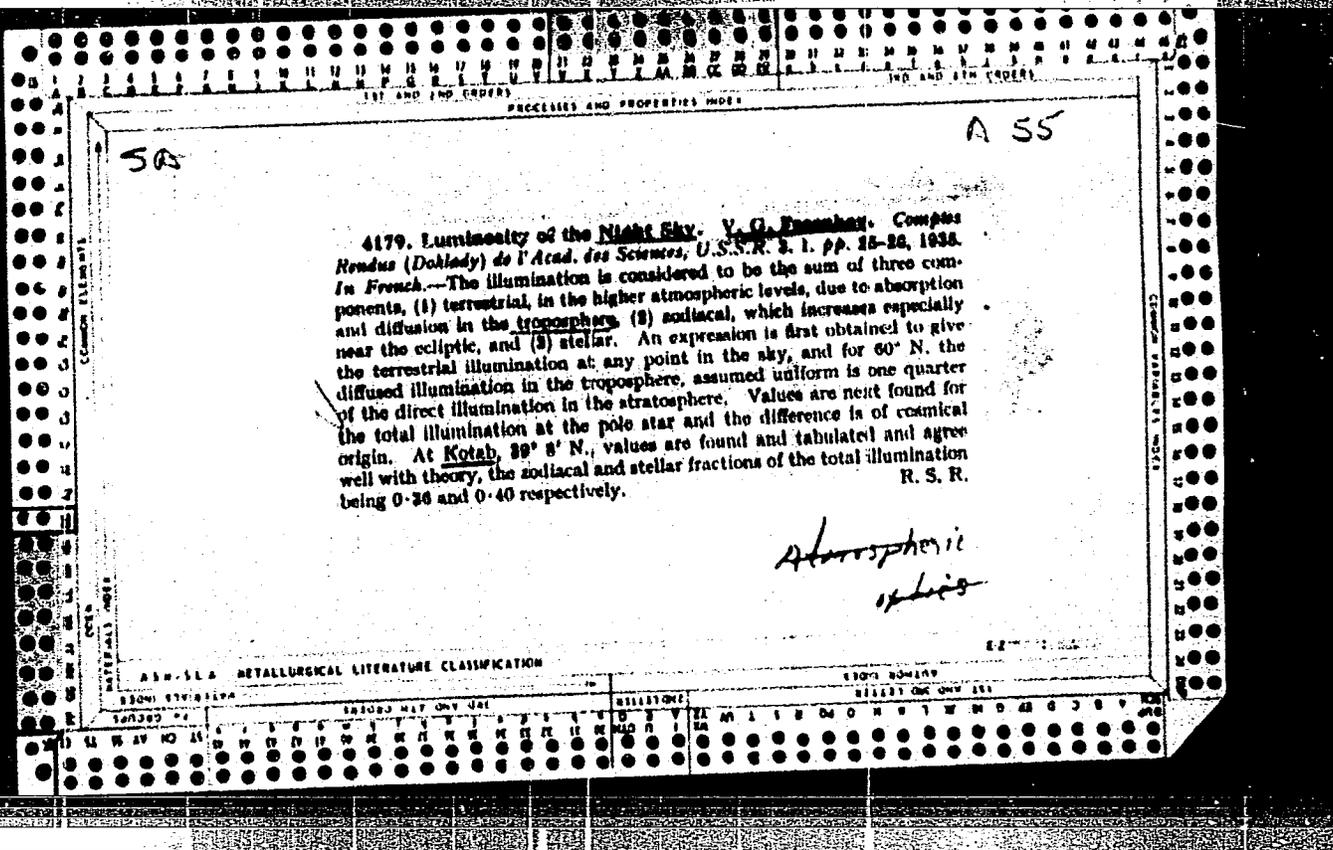
FESENKOV, V. SA A53
i

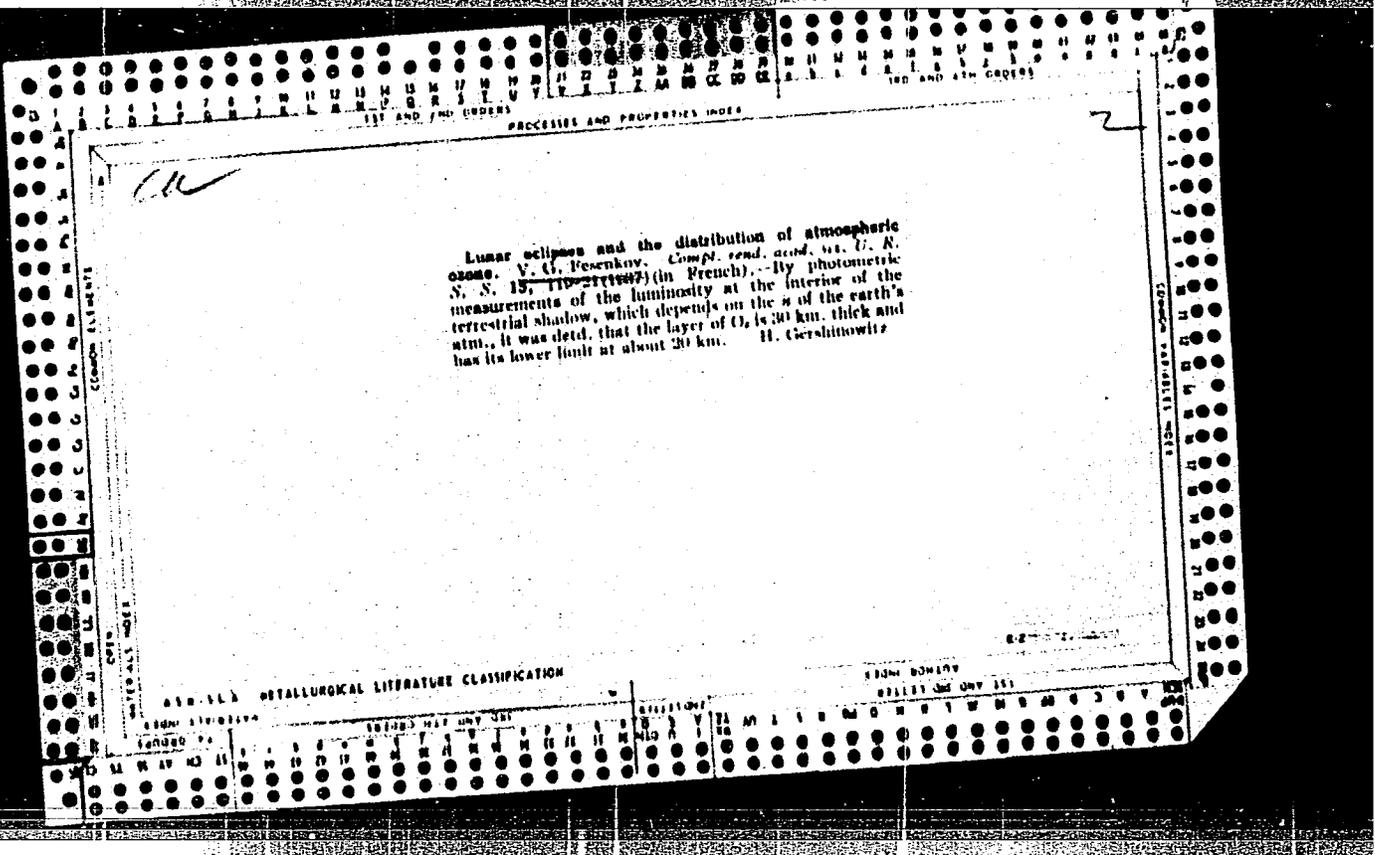
4080: Photometric Scale for Focal Stellar Images, V. Fesenkov.
(Fesenkov); Comptes Rendus de l'Acad. des Sciences, U.R.S.S. 2, pp. 86-87, July 11, 1954. In French.—The photometric scale of an astronomical plate is a function of the position of the plate relative to the focus; in wide-angle lenses the apparently best image may correspond to a sensibly extra-focal position, and the author has discussed the problem of the position for which the maximum radiation is concentrated on minimum area. The present note gives the results of experiments with artificial stars, showing that displacements from the optimum position towards the objective have negligible effects on the magnitude scale apart from zero point, whereas displacements outwards shorten the scale appreciably. The theoretical discussion is to be published elsewhere.

I. L. M.

ASB-35A METALLURGICAL LITERATURE CLASSIFICATION

117 AND 120 GROUPS 120 AND 4TH GROUPS





FESENKOV, V. G.

Luminescence of the Night Sky in Various Points Investigated with an Automatic Tubular Photometer. *Astronomicheskii zhurnal*, 1938, v. 15, no 2 p 163-169. Summary in French.

PROCESSES AND PROPERTIES INDEX

A52

3A

4416. Astrophysics at North Pole. B. G. Fessenkoff. *Comptes Rendus (Doklady) de l'Acad. des Sciences, U.S.S.R.* 19: 8, pp. 605-606, 1956. In French.—Suggestions for observation during the polar night are made (a) of the behaviour of atmospheric O₃ under photochemical reactions to u.v. solar light; (b) of night sky luminosity, since its continuous spectrum varies photographically by 300% whilst its visual light is more constant; (c) of its line 5577 which varies regularly during the night, reaching a maximum shortly before midnight, and photometric observations should be made both by photography and by eye; (d) of the zodiacal light by the same visual method (a radioactive wedge photometer). This is always visible at the north pole in a clear sky as a large luminous band spread out at the horizon, and having two wings. As this is composed of interstellar meteoric material its density cannot be constant; (e) of counts to be made both telescopically and by eye of the number of meteor trails.

A. S. D. M.

METALLURGICAL LITERATURE CLASSIFICATION

FESENKOV, V. G.

"Illumination of the sky during the total eclipse of the sun," Astron. Zhur.,
16, No. 1, 1939.

U-1518, 23 Oct 51

FESENKOV, V. G.

"Problem of the origin of the solar system," Astron. Zhur., 16, No. 1, 1939.

U-1518, 23 Oct 51

PROCESSES AND PROPERTIES INDEX

GA

6A

Problems of solar eclipses. V. G. Fesenkov, *Astron. J. Soviet Union* 10, No. 2, 1-10 (1930). P. discusses the spectrophotometric data obtainable, in particular as regards the amts. of H, He, Ca and Na present. F. H. Rathmann

COMMON ELEMENTS

COMMON VARIABLE ELEM.

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

GROUP #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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FESENKOV, V.

"Outer atmosphere," *Astron. Zhur.*, 16, No. 6, 1939.

U-1518, 23 Oct 51

FESENKOV, V.

"Hydrogen content of white dwarf stars in relation to the problem of stellar evolution," *Astron. Zhur.*, 16, No. 6, 1939.

U-1518, 23 Oct 51

FESENKOV, V. G.

Problema Zodiakal'nogo sveta (Problem of Zodiacal Light). *Astronomicheskiy zhurnal*,
1940, v. 17, no. 1, p. 25-28, 5 refs. Summary in French.

QBL.A47 v. 17

FESENKOV, V. G.

Svetimost' nobhnogo neba i Zodiakal'nyy svet (Night Sky Luminescence and the Zodiacal Light). *Astronomicheskiy zhurnal*, 1940, v. 17, no. 2, p. 41-50. Summary in French.

QBL.A47 v. 17

FESENKOV, V. G.

"Astronomy and culture," Astron. Zhur., 17, No. 3, 1940.

U-1518, 23 Oct 51

FESENKOV, V.

"The Andromeda Nebula and the Structure of the Galaxy,"
"On Color Excess of the Central Parts of the Galaxy,"
"On the Total Mass of the Absorbing Matter in the Galaxy," Dok. AN 28, No. 4,
and 7, 1940.

Academy of Sciences

FESENKOV, V.

"Concerning the Number of Stars in a Galaxy," Dok. AN, 29, 1940.

PESENKOV, V.

"Equivalentents of Colors in 1229 Stars," Dok. AN, 29, No. 2, 1940.

FESENKOV, V.

"Concerning the Rotation of the Milky Way," Dok. AN, 29, No. 3, 1940.

FESENKOV, V.

"McDonald Astrophysical Observatory in Texas," Astron. Zhur., 18, No. 1, 1941.

U-1518, 23 Oct 51

FESENKOV, V. G.

"Investigation of Zodiacal light from observations in the tropics," *Astron. Zhur.*,
18, No. 1, 1941.

U-1518, 23 Oct 51

FESENKOV, V.

"Concerning the Thermal Properties of the Moon's Sun," Dok. AN, 32, No. 1, 1941.

Academy of Sciences

PESENKOV, V.

"Concerning the Lower Edge of the Stellar Mass," Dok. AN 32, No. 4, 1941.

Astronomical Inst. of the Univ., Moscow.

FESENKOV, V.

"On the Luminosity of Nocturnal Sky in Different Latitudes," Dok. AN, 32, No. 5, 1941.

Academy of Sciences.

FESENKOV, V.

"Elliptical Meteors and Zodiacal Light," Dok. AN, 33, No. 2, 1941.

Astrophysical Observatory, University of Moscow, Kutchino.

A 51

1316 522.15 : 523.78

Preliminary results of observations made during the total eclipse of the Sun on Sept. 21, 1941. - *Annals of the B. U. J. Phys., U.S.S.R.*, 6, 1-2, pp. 1-5, 1942. - The apparatus used by the Russian expeditions is described. Clear weather favoured the observations and good flash spectra, coronal spectra and direct coronal photographs were secured. Photographs for determining the gravitational deflection of light were not so successful and may not prove measurable. Results obtained with a 2-prism spectrograph crossed with a Fabry-Perot interferometer suggest that the width of the red and green coronal lines is considerably less than previously believed. Direct photographs show that the coronal features were not symmetrical about the equator; a chaotic structure on the W. limb is probably correlated with a spot group which passed the central meridian 5 days before the eclipse, causing aurorae and a short-wave radio fading. A. M. I.

Engel'gint astronomical observatory

ASTROPHYSICAL OBSERVATORY, Leningrad

ASTROPHYSICAL LITERATURE CLASSIFICATION

FROM STYLING

RECORD MAP ONLY USE

COLLECTOR

FROM POWER

ALPHABETIC LETTERS

Common Element

Common Variable

FESENKOV, V. G.

Dinamicheskaya teoriya Zodiakal'nogo sveta (Dynamical Theory of Zodiacal Light).
Astronomicheskij zhurnal, 1942, v. 19, no. 4, p. 28-49, tables, daigrs. Summary
in French.

QB1.A47. v. 19

FESENKOV4V8G8

600

1. FESENKOV, V. G.

2. USSR (600)

"Progress of astronomy in the USSR during the last 25 years," Astron. Zhur.,
19, No 5, 1942. (submitted 15 Oct 1942) Alma-Ata

9. Report U-1518, 23 Oct 1951

FESENIKOV, V. G.

"Matter in interstellar space," Astron. Zhur., 19, No. 6, 1942.

U-1518, 23 Oct 51

FESENKOV, V. G.

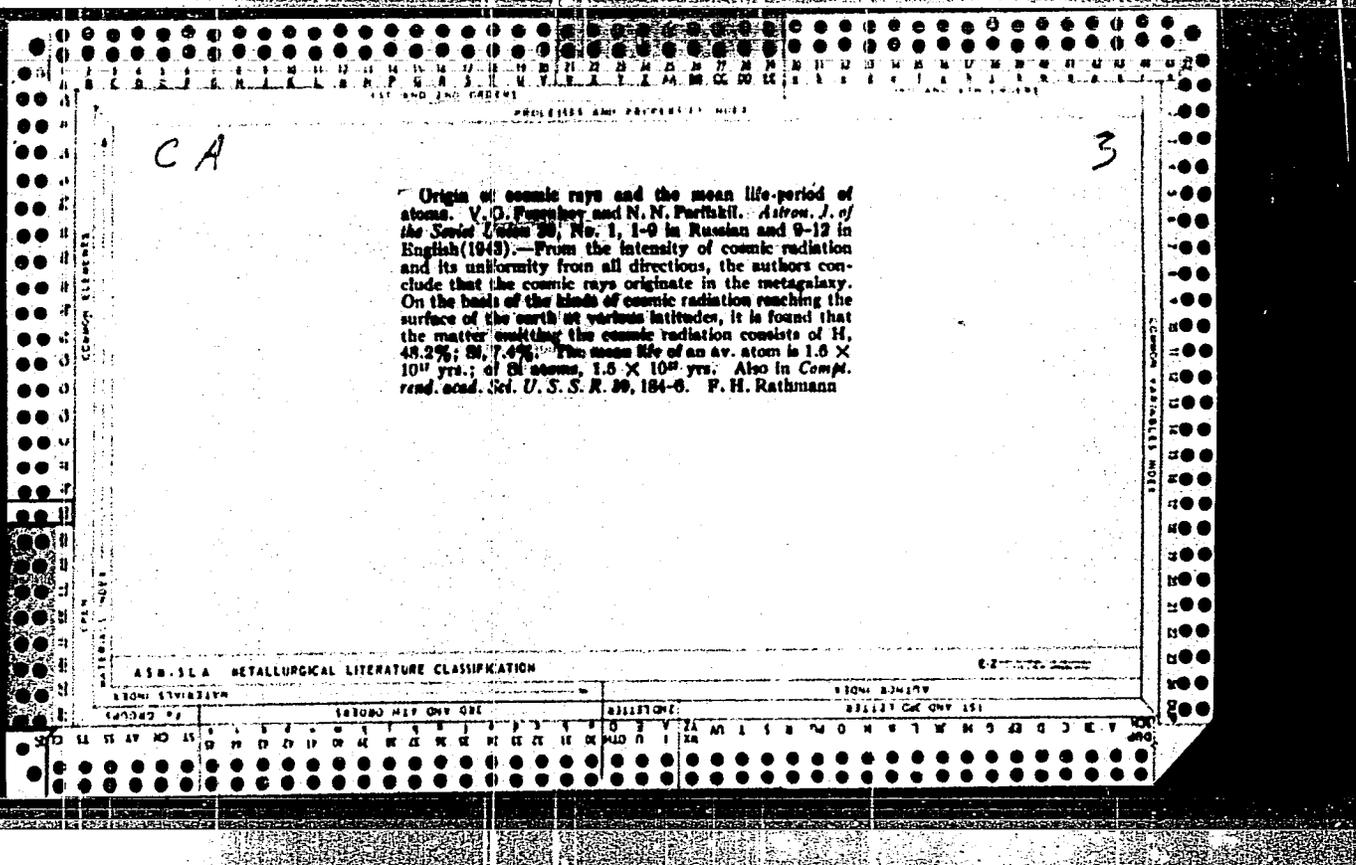
"Structural forms of the Solar corona of 21 Sep 1941," Astron. Zhur., 19,
No. 6, 1942.

U-1518, 23 Oct 51

FISENKOV, V.

"Small Planets and Cosmic Dust," Dok. AN, 34, No. 6, 1942.

Institute of Astronomy; Academy of Sciences



FESENKOV, V. G.

Effect of Scattering of Light of Higher Order Upon the Brightness of Diurnal
Sky. *Astronomicheskij zhurnal*, 1943, v. 20, no. 2, p 42-44. Summary in English

Bv. 26

H. L. / date unknown

Origin of cosmic rays and duration of existence of atoms. V. G. Fesenkov and N. N. Pariiski (*Compt. rend. Acad. Sci. U.R.S.S.*, 1943, 80, 191—194).—From the intensity of cosmic rays it is calc. that the half-life of an "average atom" is $\sim 1.6 \times 10^{17}$ years.
I. Y. B.

Propagation of waves

1953. THE OUTER SOLAR CORONA AT THE TOTAL
ECLIPSE OF 21ST SEPTEMBER, 1941. H.
FESSENKOFF. (*Comptes Rendus (Doklady)*
de l'Acad. Sci. de l'URSS, 30th May 1941,
Vol. 39, No. 6, pp. 213-214; in English.)

"The conception of a spherical shape of the outer
corona, put forward by some American astronomers,
is not correct. The radial light is totally absent
from the eclipse sky, in contradiction to the indica-
tion of some Japanese observers. The above
described method provides a simple means of
judging the real form of the corona, as it might
be observed without our atmosphere."

FESENKOV, V. G.

"On the Mass of the Moon's Atmosphere," Dok. AN 39, No. 7, 1943.

FESENKOV, V. G.

"On the Structural Features of the Solar Corona of September 21, 1941," Dok. AN
39, No. 8, 1943.

FESENKOV, V.

"On the Origin of Zodiacal Light," Dok. AN 39, No. 9, 1943.

Inst. Astronomy and Physics

FESIENKOV, V. G.

"On the Polarization of the Light Reflected by the Moon," Dok. AN, 40, No. 4, 1943.

Inst. Astronomy and Physics, Kazakhe Branch AS

FESENKOV, V. G.

"Results of Work in the Field of Astronomy and Optics of the Atmosphere," a report submitted at the General Assemblies of OPAN in 1944.

IAN-Ser Fiz, Vol 9, No 3, 1945

FESENKOV, V. G.

"The Shadow of the Earth"

Astronomicheskii Zhurnal, Vol. 23, No. 3, 1946, Pages 171-173
Inst Astronomy and Physics, AS Kozakh SSR.

Translation 568452

FESSENKOV N. G.

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~~Fessenkov, N. G.~~
Fessenkov, N. G. (On the motion of meteoric particles in the interplanetary space. Astr. J. Soviet Union [Astr. Zhurnal] 23, 333-366 (1946). (Russian. English summary)

The problem of the motion of a small particle under the combined action of gravitation and light pressure of the sun has engaged the attention of many investigators since 1900. A very thorough treatment of this problem is given by Seeliger [see, for instance, Astr. Nachr. 187, 117-422 (1911)]. Fessenkov's treatment does not differ greatly from that of Seeliger but Seeliger's name is not mentioned. The problem is essentially indeterminate, as the light pressure depends on the size of the particle and it is certain that particles of all sizes are present in interplanetary space. The result then can be given only in general terms.

The equations of motion can be written in the form $m \frac{d^2 x}{dt^2} = X_1 + X_2$ where X_1 is the gravitational component $- \frac{GMm}{r^2}$ and X_2 is the light pressure. Since the velocity of the particle is finite in comparison with the velocity of light, the terms due to the aberration of light must also be included in the expression for X_2 . These equations can be integrated in a number of ways, but since the primary interest is in the heliocentric distance of the particle and its period, only these two quantities are considered. Tables

for a numerical integration of the complicated expressions are given. Generally speaking, radiation pressure acts as a brake on the motion of the particle, so that the particle will describe a spiral ending in the sun. Approximate lengths of time of the existence of the particle before it falls into the sun are evaluated for various initial conditions. Finally the possible influence of the magnetic and electric fields of the sun is considered, but is shown to be negligible.

N. T. Bobrovnikoff (Delaware, Ohio)

3

Source: Mathematical Reviews,

Vol 8 No. 7

EE

WBS

FESENKOV, Vasilit Grigorevich

Author: Fesenkov, Vasilit Grigorevich

Title: Meteoric Material in Interplanetary Spaces
275 pp., illus.

Date: 1947. Moscow

Subject: 1. Meteors. 2. Astrophysics

Available: Library of Congress, Call No: QB741.F4

Source: Lib. of Cong. Subj. Cat., 1950

(Moscow-Leningrad, AS USSR Press, 1947) Reviewed by S. V. Orlov, Sov. Kniga, No. 5, 1948.
Also: U-3081, 16 Jan 53

FESENKOV, V. G.

"Luminosity of the Night Sky," Usp. Astron. Nauk, 3, No.2, pp. 227-55,
1947

Translation 563840

FESENKOV, V. G.

"The Luminosity of the Night Sky." Usp. Astr. Nauk, Vol. III (1947), pp. 254-255

FESENKOV, V. G.

"Gigantic Meteorite of 12 February 1947," Nauka i Zhizn, No. 11, 1947.

FESENKOV, V. G.

"Determination of Effective Height of the Radiation of the Night Sky,"

"Papers Read at the Physical-Mathematical Meeting of the Academy of Sciences held 21 October 1946," Iz. AN., Ser. Fiz., 11, No. 1, 1947.

Translation 568471

FESENKOV, V. G.

Ob ustoychivosti materii Zodiakal'nogo sveta (Stability of Zodiacal Matter).
Astronomicheskiy zhurnal, 1947, v. 24, no. 1, p. 39-43.

QBL.A47 v. 24

FESHNKOV, Vasilii Grigor'yevich, 1889-

[Cosmic space] Kosmicheskoe prostranstvo. Alma-Ata, Akademiia nauk
Kazakhskoi SSR, 1948. 17 p. (Akademiia nauk Kazakhskoi SSR. Nauchno-
populiarnaiia seriia) (MLRA 7:2)

(Cosmology)

FESENKOV, V. G.

"The Origin of the Earth," Priroda, No. 9, 1948.

Academy of Sciences.

FESENKOV, V. G.

USSR/Geophysics
Meteorites

May/Jun 1948

"The Case of the Fall of the Sikhote-Alin Meteorite,"
V. G. Fesenkov, 7 pp

"Astron Zhur" Vol XIV, No 3

Giant meteorite which fell on outskirts of Sikhote-
Alin Ridge between Vladivostok and Khabarovsk 12 Feb
1947 was unique phenomenon. Caused only fall of iron
rain in history, covering an area of 10 sq km. Indi-
vidual "ballstones" weighed as much as 300 kg. The
over-all weight of the meteorite was about 1,000
tons. Its elliptical crater measured 1 x 0.5 km.

USSR/Geophysics (Cont'd)

May/Jun 1948

being oriented roughly in a north - south line.
Gives full account of the scientific investigation.
Concludes that speed of meteorite was small, compared
with that of the Tunguska meteorite of 30 Jul 1908.

76152

FESENKOV, V. G. (Editor)

"Works of the Expeditions for Observation of the Solar Eclipse of 21 September 1941
Press of Academy of Sciences USSR, Moscow/Leningrad, 397 pp, 1949.

FESENKOV, V. G.

Fesenkov, V. G. - "The posing of the problem of cosmogony in modern astronomy,"
Astron. zhurnal, 1949, Issue 2, p. 67-83, - Bibliog: 16 items.

SO: U-3736, 21 May 53, (Letopis 'Zhurnal 'nykh Statey, No. 17, 1949).

FESENKOV, V. G.

26191 Ob atmosfery teni Zemli. Astron. zhurnal, 1949, vyp. 4, s. 233-48

SO: LETOPIS' NO. 35, 1949

FESENKOV, V. G.

"How Contemporary Science Explains the Origin of the Solar System and the Development of Celestial Bodies," Nauka I Zhizn', No. 5, 1949.

Academy of Sciences

30707. FESENKOV, B. G.

O nalichii otkrytykh vodoyemob na marse. Astron. Zhurnal, 1949, vyp. 5,
c. 273-77.

PA 54/49164

FESENKOV, S.G. V.

Jun 49

USSR/Geophysics
Atmosphere
Chemistry, Synthesis

"In the Department of Physicomathematical Sciences"

5 pp

"Vest Ak Nauk SSSR" No 6

Annotations on Fesenkov's report, "Atmospheric Umbra
of the Earth," and Bresler's report, "Synthesis of
Proteins and Peptides Under High Pressure." Includes
reports of the expedition studying conditions sur-
rounding the Bikhote-Alin meteoritic shower. Kipe-
ditions of Lab of Atm Turbulence, Geophys Inst,

54/49164

Jun 49

USSR/Geophysics (Contd)

recurred valuable material on measurements of turbu-
lence close to the earth and in free atmosphere.

54/49164

FESENKOV, V. G.

"The Zodiacal Light and the Outer Atmosphere of the Earth," Astron. Zhur. No. 6,
1949.

Inst. of Astro. & Phys., AS of KazSSR

FESENKOV, V.G.

22934 Vestniki 12 meshplanetnogo prostranstva. (Beseda o pred. Kom-ta po meteoritam akad. Nauk SSSR V. G. Fesenkovym) Vokrug sveta, 1949, No. 7, C. 24-26.

SO: LETOPIS' NO. 31, 1949

FESENKOV, V. G.

"The 25th Anniversary of the "Astronomicheskii Zhurnal," Astron. Zhur. 26,
No. 2, 1949.

PROCESSES AND PROPERTIES INDEX

A 52

SA 523.1

6695. The present status of the problem of cosmogony in contemporary astronomy. FESSENKOFF, V. G. *Astron. J. USSR*, 26 (No. 2) 67 (1949) In Russian. English summary in *Astron. News Letter (Harvard)* (No. 45).—A general review of the whole problem. The first 2 sections are devoted to the criticism of theories which attribute the origin of the planets to meteoric matter captured by the sun. Next, the author emphasizes the importance of considering the evolution of the sun as a member of the galaxy. This leads him to propose that the stars of the main sequence, including the sun, evolve along this sequence, with a loss of mass $dm/dt = \text{const} \cdot L$ attributed to some form of corpuscular radiation. As this decrease of mass takes place the star remains on the mass-luminosity curve, which determines its rate of conversion of H into He by the Bethe process. This permits the author to compute the decrease in the H abundance of the star for different ages T , and changes in mass, $k = m_0/m_1$. A few billion years ago the sun had a mass γ now, and the planetary system was correspondingly contracted in diameter.

could have resulted, with a break-up of the solid outer layers into pieces ranging from several hundred kilometers in diameter to meteoric of negligible size. The retrograde asteroids are regarded as minor planets captured by the principal planets at a time when the solar system contained a large amount of diffuse matter forming a resisting medium.

ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION

F. ESENKOY, V. G.

76-240 541.593.9
 Fesenkov, V. G. Ob atmosfernoj tenni zemli. [Atmospheric shadow of the earth.]
 Izvestiya Akad. Nauk SSSR, Moscow, 26(4):233-248, 1949. 16 figs. 6 tabs. eqs. 520.
 Description of the earth's shadow, appearing in the form of a light segment of pale blue
 edged by a dim dark border about 10° wide stretching out at most to a height of 20-22°
 above the horizon at the time of sun rise or setting which can be observed when the sun is
 below the horizon, up to a zenith distance of 95°, observed by the author in Oct. 1948 in the
 South Pribalkash Desert is described and the photometric theory of the phenomenon is de-
 veloped. It is shown that the phenomenon is in reality not the shadow of the earth in the
 true sense but the result of peculiarities of the earth's atmospheric light field in the case when
 the direction of the sun rays is close to horizontal. It is pointed out that the phenomenon
 of appearance of the shadow permits one to judge the importance of scattering of higher orders
 for different moments of time at some points of the sky and that it is the most sensitive criterion
 of constancy of atmospheric optical properties, which gives much better results than direct
 determination of solar radiation. Subject headings: 1. Earth's shadow 2. Scattering of light.
 —A. M. P.

Handwritten note: 1. Scattering of light

2300

Instit. Astronomy & Physics, A.S. Kazakh Office

Translation 568496

FEBRUARY, V. G.

FALASIA

USSR/Astronomy - Mars

Sep/Oct 49

"Presence of Open Reservoirs of Water on Mars,"
V. G. Resenkov, Inst of Astr and Phys, Acad Sci
Kazakh SSR, 4 1/2 pp

"Astron Zhur" Vol XXVI, No 5

Theoretical calculation of brightness of solar
light flashed from a hypothetical Martian lake
or other exposed body of water shows stellar
brightness, for Mars in opposition, to be $n=+1.5$.
Similarly, minimum radius of a round "pool" that
can be telescopically detected by a flash of light
is $R \text{ min} = 7.4 \text{ km}$. Author hopes to extend his

14974

USSR/Astronomy - Mars (Contd)

Sep/Oct 49

study to a determination of smaller concentra-
tions of water and plant life.

14974

PROCESSES AND PROPERTIES INDEX

A 52

SA
 5920. The zodiacal light and the outer atmosphere of the earth. V. G. Fezgenkov. Astron. J., USSR, 26 (No. 6) 344 (1949) In Russian. English Abstr. in Astron. News Letter. (Harvard) No. 54, 3 (1951).

The author's observations indicate that the light has a broad base near the horizon which may be of terrestrial origin. An asymmetry of isophotes with respect to the ecliptic is explained by assuming an extension of the earth's atmosphere in the plane of the ecliptic. (See also Abstr. 28(1951). R. A. Newing

METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND GROUPS 3RD AND 4TH GROUPS 5TH AND 6TH GROUPS

1ST AND 2ND GROUPS 3RD AND 4TH GROUPS 5TH AND 6TH GROUPS

FESENKOV, V. G.

PA 29/49T98

USSR/Physics

Astronomy

Solar Phenomena

Feb 49

"Secular Change in the Sun's Mass," Acad V. G.
Fesenkov, 3 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 6

Attempts to evaluate the role of corpuscular radiation, i.e., the stars' continuous loss of material in the form of a stream of corpuscles, in the past history of the sun, regarding it as a function of the stars' radiance. Submitted 3 Jan 49.

29/49T98

PA 11/49T41

FESSENKOV, V.G.

Apr 49

USSR/Geophysics
Meteors

"Drift of a Bolide Trace on 11 October 1948," Acad.
V. G. Fessenkov, 4 pp

"Dok Ak Nauk SSSR" Vol LIV, No 4

Determined that this trace dimmed very slowly as
a result of radiation (by 9 times every 20
minutes). Basic reason for dimming of the trace's
brilliance is not radiation of its material, but
diffusion of it into the surrounding atmosphere.
This meteor was observed from the Kara-Issyk
Ottau Desert (southern Fribalkhash) for 40

41/49T41

Apr 49

USSR/Geophysics (Contd)

minutes, during which time it traversed the celes-
tial arc and was lost in the Milky Way. Sub-
mitted 1 Feb 49.

Academy of Sciences

41/49T41

FESENKOV, V. G.

PA 52/49T45

USSR/Geophysics
Meteorites

May 49

"Mass of the Atmospheric Trail of the Sikhote-Alin Meteorite," V. G. Fesenkov, 2 pp

"Dok Ak Nauk SSSR" Vol LXVI, No 3

Calculations of Sikhote-Alin meteorite trail show meteorite's mass amounts to about 200 tons or more if particles are finer than 10^{-5} cm or if condensation of gaseous matter, produced by ebullition of the meteorite, does not occur. Submitted 31 Mar 49.

52/49T45

Translation Suppl- 2524467, 30 Dec 54

157T2

FESENKOV, V. G.

USSR/Astronomy - Light, Reflection
Asteroids

11 Nov 49

"Brightness of the Zodiacal Band and Total Mass of
the Asteroidal Matter," Acad V. G. Fesenkov, 4 pp

"Dok Ak Nauk SSSR" Vol LXIX, No 2 -p.149-52

Observable brightness of the zodiacal band is
 1.1×10^{-8} stilbs, from which it follows the mass
of asteroidal matter in the band must be of the
order 10^{27} - 10^{26} grams, i.e., 10-100 less than the
earth and thickness of the band must be about 1
km. Submitted 14 Sep 49.

Translation 768460

157T2

FESENKOV, V.G.

"Report of Address". Vestnik Akad. Nauk, 5, (1950), 95-96.

SO: Translation- 2524467, 30 Apr 1954.

30 Dec 54

FESENKOV, V. G. Academician

"A Few Problems of Meteoritics"
Akademiya Nauk SSSR Meteoritika, No. 8, 1950, 38-54.

Translation 563461

FESENKOV, V.G.

"On the Gaseous Tail of the Earth." *Priroda*, 11 (1950), 5-10.

SO: Translation-2524467- 30 Apr 1954.

30 Dec 54

FISENKOV, V. G.

FA 187T24

USSR/Geophysics - Upper Atmosphere

May/June 50

"Gaseous Tail of Earth," V. G. Fesenkov, Mountain
Astrophys Obs, Acad Sci Kazakh SSR

to be done

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIV, No 3, pp 257-263

Earth's atm at 500-km altitude probably consists of
nitrogen and oxygen in rarefied and dissipated state.
Hydrogen detected in aurora polaris probably origin-
ates in solar eruptions and has temp of 1,000° C.
Under these circumstances, the Earth's atmosphere is
assumed to extend indefinitely, forming conoid shape
changing under the Sun's influence. Submitted 27 Feb
50 at Session of Dept of Physicomath, Acad Sci USSR.

rk
187T24

FESENKOV, V. G.

158T45

USSR/Geophysics - Gegenschein
Atmosphere

Mar/Apr 50

"The Earth's Gaseous Tail," V. G. Fesenkov, Inst
of Astro phys, Kazan Affiliate, Acad Sci USSR,
9 pp

"Astron Zhur" Vol. XXVII, No 2

Outermost extended layers of earth's atmosphere
are not symmetrical with earth's surface, but have
nonspherical form, are sharply deformed, and ex-
tend far from the earth in the elliptic plane. In
the direction toward the sun, outer layers of at-
mosphere form ellipsoid of revolution flattened in
the direction of the pole of the elliptic.

158T45

Translation Sep-2524467, 30 Dec 54

PROCESSES AND PROPERTIES INDEX

APR 1951

AM'S/A+B

551.510.53:523.59

2.4-53
 [The gaseous protuberance of the earth's atmosphere.] *Izv.*, Moscow, 59(11):3-10, Nov. 1950. 17 refs. **DLC**—The author describes phenomena, recently observed by him and his collaborators at the Alumina Astrophysical Observatory (in the vicinity of Alma Ata), designated as "Zodiacal twilight" (distorted zodiacal light) and "Pseudo Zodiacal light" (distorted counterzodiac). An explanation of these phenomena is seen in the shape of the terrestrial atmosphere which, contrary to prevalent opinion, is not spherical but which forms in the plane of the terrestrial orbit a protuberance with a direction opposite to the sun. The history of research on zodiacal light by the author (since 1914) and others (1791-1936) is briefly discussed. *Subject Headings: Zodiacal Light, Atmosphere.*—(C.A.)

4X271

550-55A METALLURGICAL LITERATURE CLASSIFICATION

FESENKOV, ACAD V. G.

PA 165723

USSR/Geophysics - Upper Atmosphere

11 Feb 50

"The Gaseous Tail of the Earth," Acad V. G. Fesenkov

"Dok Ak Nauk SSSR" Vol LXX, No 5, pp 785-787

Detailed analysis of glow of the night sky reveals new "ecliptic" component in its make-up in which manifestation of a gaseous tail can be seen. Its form, expanse, and distribution of matter within it can be evaluated approximately from observations of zodiacal light and the gegenschein. Tail may be continuous jet of gas in form of truncated cone with 4° angle at apex in which density of matter is halved every $4.7 r$ (where r is the earth's radius). Submitted 12 Dec 49.

165723

Translation 563359

FESENKOV, V. G.

Meteorites

Movement of the Sikhote Alin meteorite in the atmosphere. Meteoritika, No. 9, 1951.

9. Monthly List of Russian Accessions, Library of Congress, June 195~~7~~⁸, Uncl.
52

1. FESENKOV, V. G.
2. USSR (600)
4. Cosmogony
7. Hypothesis of Cosmogony by Academician O. Yu. Shmidt and the present day status of the cosmogonical problem. Latv.PSR Zin.Akad.Vestis, no. 10, 1951.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

FESENKOV, V., G.,

Pa. 173T16

USSR/Astronomy - Satellites

Jan/Feb 51

"Stability of a Revolving Satellite of Small Mass,"
V. G. Fesenkov, Inst Astrophys, Acad Sci Kazakh SSR.

"Astron Zhur" Vol XXVIII, No 1, pp 15-20

Shows possibility of proving that conditions governing disturbance of satellite that trespasses limiting condition of approach to perturbing planet is eased and limiting distance increased if body possesses its own rotational motion of higher value than its orbital.

173T16

FESENKOV, V. G.

177T4

USSR/Astronomy - Comets

Mar/Apr 51

"On the Origin of Comets," V. G. Fesekov,
Astrophys Inst, Acad Sci Kazakh SSR

"Astron Zhur" Vol XXVIII, No 2, pp 98-111

Reviews theories by Vsekhviatskiy, considering volcanic eruptions on Jupiter or Saturn, and by S. V. Orlov, discussing collisions of asteroids and meteors. Fesekov tries to fill lack of explanation of long-period comets, by computing masses projected beyond the solar system and falling into solar gravitational fld due to perturbation of some near star.

LC

177T4

FESENKOV, V. G.

18711

USSR/Astronomy - Nebulae

Jul/Aug 51

"Some Structural Peculiarities of Gaseous Nebulae and Their Connections With Stars," V. G. Fesenkov, Izv. Akad. Nauk Kazakh SSR, No. 4, pp 215-218

"Astron Zhur" Vol XXVIII, No 4, pp 215-218

In USSR D. D. Makutov's meniscus telescopes are used instead of Schmidt type. First such instrument was installed in 1950 in Mountain Astrophys Obs of Alma-Ata, and is used by D. A. Rozhkovskiy. Photographs by this telescope are used to discuss

IC

18711

USSR/Astronomy - Nebulae (Contd)

Jul/Aug 51

connections between shape of nebulae America in Cygnus and other nebulae and distribution of faint stars.

IC

18711

FESENKOV, V. G.

PA 187T3

USSR/Astronomy - Atmosphere, Earth's Jul/Aug 51

"Problem of Thermal Dissipation of the Atmosphere,"
V. G. Fesenkov, Astrophys Inst, Acad Sci Kazakh
SSR

"Astron Zhur" Vol XXVIII, No 4, pp 221-233

Thermal dissipation depends on mol dimensions of
gas, but mainly on ratio T/m (temp to mol wt).
Small admixt of dissipative gas to atm makes the
whole atm able to dissipate. Thermal dissipation
may explain differences in atm compds of planets
with various masses, and also their difference from
the Sun's compn. Thermal dissipation of atms pos-
sesses cosmogonic significance.

LC

187T3

FESENKOV, V. G.

PA 19211

USSR/Astronomy - Astrophysics

Sep/Oct 51

"Problem of the Structure and Chemical Composition of the Big Planets," V. G. Fesenkov, A. G. Masevich

"Astron Zhur" Vol XXVIII, No 5, pp 317-337

Chem compn of the big planets cannot be studied directly and are difficult to establish. Equil of a planet is defined by eq of hydrostatic equil from which authors derive density and compn of planets.

19211

FESENKOV, V. G.

EA 1947

USSR/Astronomy - Stellar Evolution Nov/Dec 51

"Criterion of Tidal Stability and Its Application
in Cosmogony;" V. G. Fesenkov

"Astron Zhur" Vol XXVIII, No 6, pp 492-517

Attempts to solve problem of vol of rarefied
material subject to tidal action of external
gravitating body. Applies results to origin of
globular clusters, interstellar distances, struc-
ture of solar system, and relation between mass
and revolution of planets.

1947

FESENKOV, V.G., Akademik

[Corpuscular radiation as a factor in the evolution of the sun and stars; report at the 8th Congress of the International Astronomical Union, Rome, 1952] Korpuskaliarnaia radiatsiia kak faktor evoliutsii solntsa i zvezd; doklad na VIII s"ezde Mezhdunarodnogo astronomicheskogo soiuza, Rim, 1952. Moskva, Izd-vo Akad.nauk SSSR 1952, 69 p. [Microfilm] (MLRA 8:9)
(Stars--Constitution)

FESENKOV, V.G.

Nature and possible origin of meteorites, the zodiacal light
and asteroids. Vop.kosm.1:92-130 '52. (MLRA 7:2)
(Meteorites) (Planets, Minor) (Zodiacal light)

PESENKOV, V. G.

"Progress of Meteoritics During 1950"

Source: Akademiya Nauk SSSR, Meteoritika, No. 10, 1952, Pages 26-36.

Translation 568457

FESENKOV, V. G. (Acad.)

"Birth of a Star," Nauka i shizn', 19, No.8, 1952